

WHAT IS CLAIMED IS:

1. A mounting apparatus for sprinklers, comprising: a pair of ceiling support rails horizontally extending in parallel to the ceiling in a building, with a predetermined gap defined between the pair of ceiling support rails; a pair of vertical brackets respectively mounted at lower ends thereof to upper ends of the pair of ceiling support rails; a reducer support beam horizontally held on upper ends of the pair of vertical brackets to be perpendicular to the ceiling support rails; and a fixing bracket mounted to a predetermined portion of the reducer support beam between the pair of ceiling support rails, so as to vertically hold a sprinkler reducer which has a sprinkler head at an end thereof, wherein the fixing bracket is formed by bending a metal plate having a predetermined width and length, the fixing bracket comprising:

a rear part;

first and second side parts extending from both side edges of the rear part, respectively, so that the first and second side parts are perpendicular to the rear part;

first and second curved parts extending from ends of the first and second side parts, respectively, while being bent inward to form a rounded shape;

first and second tightening parts extending from

ends of the first and second curved parts, respectively,  
so that the first and second tightening parts are  
parallel to each other;

5 first and second notches respectively formed on  
predetermined portions of the first and second side parts  
such that the first and second notches are aligned with  
each other and internal edges of the first and second  
notches are in contact with an external surface of the  
reducer support beam, when the fixing bracket is fitted  
10 over the reducer support beam at the first and second  
notches;

first and second bolt holes formed on the first and  
second tightening parts, respectively, such that the  
first and second bolt holes are aligned with each other;  
15 and

a wing bolt tightened to the first and second bolt  
holes, and

each of the vertical brackets is made of a metal plate  
having a predetermined width and length, and comprises:

20 first and second vertical sidewalls integrated  
together into a U-shaped single structure by a top wall;

front and rear guide projections extending upward  
from front and rear ends of the top wall, respectively;

third and fourth bolt holes formed at predetermined  
25 positions on upper portions of the first and second

vertical sidewalls, respectively, so as to be aligned with each other;

a leaning part formed by inward bending a lower end of one of the first and second vertical sidewalls;

5 fifth and sixth bolt holes axially formed on a lower end of a remaining one of the first and second vertical sidewalls and the leaning part, respectively, so as to be aligned with other;

10 a coupling bolt tightened into an internal thread of the fifth bolt hole, so as to couple each of the vertical brackets to an associated ceiling support rail;

first and second mounting holes formed on rear parts of the upper portions of the first and second vertical sidewalls, respectively, so as to be aligned with each other;

15 first and second hook-type locking grooves formed on predetermined positions of front edges of the first and second vertical sidewalls, respectively; and

20 a locking unit formed by bending a wire having a predetermined diameter and strength, the locking unit having at an intermediate portion thereof a locking part so as to be removably locked to the hook-type locking grooves, with first and second ends of the locking unit being rotatably held in the first and second mounting holes so that the locking unit rotates around the first

and second mounting holes, thus being locked to the hook-type locking grooves at the locking part thereof.

2. The mounting apparatus according to claim 1, wherein  
5 each of the vertical brackets further comprises:

a guide hole formed on a predetermined position of one of the first and second vertical sidewalls; and

a guide rod projected inward from a lower edge of an opening which is formed on a predetermined position of a  
10 remaining one of the first and second vertical sidewalls corresponding to the guide hole, so that the guide rod is inserted into the guide hole to move relative to the guide hole.

15 3. The mounting apparatus according to claim 1, wherein the fixing bracket further comprises:

a plurality of anti-slip projections projected on internal surfaces of both the first and second curved parts to prevent the sprinkler reducer from moving in a space defined  
20 between the first and second curved parts and the reducer support beam.